

S/N 10/541, 747

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S/N 10/541,747

| | | | | |
|---------------------|----------------|----|----------|--------------|
| PATENT INFORMATION: | US 20060147695 | A1 | 20060706 | |
| APPLICATION INFO.: | US 2004-541747 | A1 | 20040109 | (10) |
| | WO 2004-JP100 | | 20040109 | |
| | | | 20050708 | PCT 371 date |

| | NUMBER | DATE |
|-----------------------|--|----------|
| PRIORITY INFORMATION: | JP 2003-3856 | 20030110 |
| | JP 2003-407799 | 20031205 |
| DOCUMENT TYPE: | Utility | |
| FILE SEGMENT: | APPLICATION | |
| LEGAL REPRESENTATIVE: | FOLEY AND LARDNER LLP, SUITE 500, 3000 K STREET NW,
WASHINGTON, DC, 20007, US | |
| NUMBER OF CLAIMS: | 18 | |
| EXEMPLARY CLAIM: | 1 | |
| NUMBER OF DRAWINGS: | 3 Drawing Page(s) | |
| LINE COUNT: | 952 | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB An object of the present invention is to provide a fiber-reinforced resin composition suitable for producing molded articles for products such as electrical and electronic equipment. The object has been achieved by a biodegradable resin composition containing a kenaf fiber, which contains a kenaf fiber in an amount of 10 to 50% by mass. In this case, the biodegradable resin is preferably a crystalline thermoplastic resin, particularly polylactic acid. The average fiber length (number average fiber length of the fibers excluding fragments) of the kenaf fiber is preferably 100 μm to 20 mm, and the kenaf fiber preferably contains a kenaf fiber having a fiber length of 300 μm to 20 mm. As the kenaf fiber, a fiber prepared from bast of kenaf is preferred.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L2 ANSWER 2 OF 18 USPATFULL on STN
ACCESSION NUMBER: 2006:6133 USPATFULL
TITLE: Extrusion of synthetic wood material
INVENTOR(S): Brandt, Jeffrey R., Blacklick, OH, UNITED STATES
PATENT ASSIGNEE(S): Crane Plastics Company LLC, Columbus, OH, UNITED STATES
(U.S. corporation)

| | NUMBER | KIND | DATE |
|-----------------------|--|------|---|
| PATENT INFORMATION: | US 6984676 | B1 | 20060110 |
| APPLICATION INFO.: | US 2002-247918 | | 20020920 (10) |
| RELATED APPLN. INFO.: | | | Division of Ser. No. US 2000-659266, filed on 11 Sep
2000, ABANDONED Continuation of Ser. No. US
1996-735329, filed on 22 Oct 1996, Pat. No. US 6117924 |
| DOCUMENT TYPE: | Utility | | |
| FILE SEGMENT: | GRANTED | | |
| PRIMARY EXAMINER: | Cain, Edward J. | | |
| LEGAL REPRESENTATIVE: | Standley Law Group LLP | | |
| NUMBER OF CLAIMS: | 14 | | |
| EXEMPLARY CLAIM: | 1 | | |
| NUMBER OF DRAWINGS: | 2 Drawing Figure(s); 2 Drawing Page(s) | | |
| LINE COUNT: | 364 | | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB An extrusion process is described for the extrusion of a synthetic wood material. The process includes a significantly higher compression ratio through which the extruded product must pass. The higher compression ratio results in significantly improved product qualities.

S/N 10/541,747

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L2 ANSWER 3 OF 18 USPATFULL on STN
ACCESSION NUMBER: 2004:243421 USPATFULL
TITLE: Method of producing a fiber board
INVENTOR(S): Okuzawa, Masayuki, Sanda-shi, JAPAN
Ohnishi, Kenji, Osaka-shi, JAPAN
Okudaira, Yuzo, Kazaki-gun, JAPAN
Ando, Hideyuki, Saitama-shi, JAPAN
Umeoka, Kazunori, Ikoma-gun, JAPAN
Ryu, Bunkai, Kadoma-shi, JAPAN
Naito, Shigeki, Shijonawate-shi, JAPAN
Sugawara, Ryo, Nishinomiya-shi, JAPAN

| | NUMBER | KIND | DATE |
|---------------------|----------------|------|---------------|
| PATENT INFORMATION: | US 20040187998 | A1 | 20040930 |
| | US 7045027 | B2 | 20060516 |
| APPLICATION INFO.: | US 2004-757532 | A1 | 20040115 (10) |

| | NUMBER | DATE |
|-----------------------|---|----------|
| PRIORITY INFORMATION: | JP 2003-96846 | 20030331 |
| DOCUMENT TYPE: | Utility | |
| FILE SEGMENT: | APPLICATION | |
| LEGAL REPRESENTATIVE: | BIRCH STEWART KOLASCH & BIRCH, PO BOX 747, FALLS CHURCH, VA, 22040-0747 | |
| NUMBER OF CLAIMS: | 11 | |
| EXEMPLARY CLAIM: | 1 | |
| NUMBER OF DRAWINGS: | 8 Drawing Page(s) | |
| LINE COUNT: | 1213 | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention relates to a method of producing a fiber board characterized in that it comprises the following processes (a)-(f):

- (a) a separating process of a bast portion,
- (b) a fiberizing process by defibrating the bast portion of the kenaf,
- (c) a preparing process of a mat comprising the kenaf fibers having an average length of 10-200 mm and an average diameter of 10-300 μm ,
- (d) a supplying process of an adhesive agent into the fiber mat,
- (e) a drying process of the adhesive agent, and
- (f) a molding process by heating said fiber mat under pressure to form a fiber board having a density of 600-900 kg/m.sup.3.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L2 ANSWER 4 OF 18 USPATFULL on STN
ACCESSION NUMBER: 2003:26210 USPATFULL
TITLE: Compression molding of synthetic wood material
INVENTOR(S): Brandt, Jeffrey R., Blacklick, OH, United States
Zehner, Burch E., Gahanna, OH, United States
PATENT ASSIGNEE(S): Crane Plastics Company LLC, Columbus, OH, United States
(U.S. corporation)

| | NUMBER | KIND | DATE |
|--|--------|------|------|
|--|--------|------|------|

PATENT INFORMATION: US 6511757 B1 20030128
APPLICATION INFO.: US 2000-712118 20001114 (9)
RELATED APPLN. INFO.: Continuation of Ser. No. US 1996-739416, filed on 29 Oct 1996, now patented, Pat. No. US 6180257
DOCUMENT TYPE: Utility
FILE SEGMENT: GRANTED
PRIMARY EXAMINER: Kiliman, Leszek
LEGAL REPRESENTATIVE: Standley & Gilcrest LLP
NUMBER OF CLAIMS: 21
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 3 Drawing Figure(s); 2 Drawing Page(s)
LINE COUNT: 296

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A system of compression molding a synthetic wood formulation into a commercially useable synthetic wood component is described. Surprising results are achieved when the dry formulation is placed under heat and pressure. Many different components may be made using the present invention, such as by example, wood-like trim components for the housing construction industry.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L2 ANSWER 5 OF 18 USPATFULL on STN
ACCESSION NUMBER: 2002:340353 USPATFULL
TITLE: Extrusion of synthetic wood material using thermoplastic material in powder form
INVENTOR(S): Zehner, Burch E., Gahanna, OH, United States
PATENT ASSIGNEE(S): Crane Plastics Company Limited Partnership, Columbus, OH, United States (U.S. corporation)

| | NUMBER | KIND | DATE |
|-----------------------|--|------|---------------|
| PATENT INFORMATION: | US 6498205 | B1 | 20021224 |
| APPLICATION INFO.: | US 2001-36053 | | 20011227 (10) |
| RELATED APPLN. INFO.: | Continuation of Ser. No. US 1996-741846, filed on 31 Oct 1996, now patented, Pat. No. US 6344504 | | |
| DOCUMENT TYPE: | Utility | | |
| FILE SEGMENT: | GRANTED | | |
| PRIMARY EXAMINER: | Lipman, Bernard | | |
| LEGAL REPRESENTATIVE: | Standley & Gilcrest LLP | | |
| NUMBER OF CLAIMS: | 20 | | |
| EXEMPLARY CLAIM: | 1 | | |
| NUMBER OF DRAWINGS: | 1 Drawing Figure(s); 1 Drawing Page(s) | | |
| LINE COUNT: | 327 | | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB An extrudable wood composite which includes cellulosic material and a powdered thermoplastic material.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L2 ANSWER 6 OF 18 USPATFULL on STN
ACCESSION NUMBER: 2002:34121 USPATFULL
TITLE: Process for production of chemical pulp from herbaceous plants
INVENTOR(S): Gallagher, Hugh P., Goshen, NY, United States
Hill, Nelson F., Monroe, NY, United States
Koster, Curtis P., Mahwah, NJ, United States
Cassidy, Robert F., Warwick, NY, United States
PATENT ASSIGNEE(S): International Paper Company, Purchase, NY, United

States (U.S. corporation)

| | NUMBER | KIND | DATE |
|---------------------|----------------|------|--------------|
| PATENT INFORMATION: | US 6348127 | B1 | 20020219 |
| APPLICATION INFO.: | US 1999-252499 | | 19990218 (9) |

| | NUMBER | DATE |
|-----------------------|--|---------------|
| PRIORITY INFORMATION: | US 1998-75238P | 19980219 (60) |
| DOCUMENT TYPE: | Utility | |
| FILE SEGMENT: | GRANTED | |
| PRIMARY EXAMINER: | Alvo, Steve | |
| LEGAL REPRESENTATIVE: | Luedeka, Neely, & Graham, P.C. | |
| NUMBER OF CLAIMS: | 33 | |
| EXEMPLARY CLAIM: | 1 | |
| NUMBER OF DRAWINGS: | 5 Drawing Figure(s); 5 Drawing Page(s) | |
| LINE COUNT: | 635 | |

AB A process for production of chemical fibrous pulp for making paper, paperboard and other fibrous products from herbaceous plants, such as kenaf. Pulp from the herbaceous plant is made by a process which involves densification of pieces of all or part of the plants; i.e., both the core and the stalk or just the core portion, into cubes or pellets having a density ranging from about 15 to about 70 lbs/ft.³, preferably from about 25 to about 50 lbs/ft.³, which are then chemically digested to produce a fibrous pulp. The densified cubes or pellets may be digested alone or together with conventional wood chips. A principal advantage of the invention is that the densified cubes or pellets exhibit significantly better yield and strength after treatment by conventional chemical pulping methods as compared with the undensified material, enabling more efficient and economical use of this material to supplement limited supplies of conventional hardwood and softwood pulp sources.

L2 ANSWER 7 OF 18 USPATFULL on STN
 ACCESSION NUMBER: 2002:24329 USPATFULL
 TITLE: Extrusion of synthetic wood material
 INVENTOR(S): Zehner, Burch E., Gahanna, OH, United States
 Laver, Terry C., Madison, WI, United States(4)
 PATENT ASSIGNEE(S): Crane Plastics Company Limited Partnership, Columbus, OH, United States (U.S. corporation)

| | NUMBER | KIND | DATE |
|-----------------------|--|------|--------------|
| PATENT INFORMATION: | US 6344504 | B1 | 20020205 |
| APPLICATION INFO.: | US 1996-741846 | | 19961031 (8) |
| DOCUMENT TYPE: | Utility | | |
| FILE SEGMENT: | GRANTED | | |
| PRIMARY EXAMINER: | Lipman, Bernard | | |
| LEGAL REPRESENTATIVE: | Standley & Gilchrest LLP | | |
| NUMBER OF CLAIMS: | 9 | | |
| EXEMPLARY CLAIM: | 1 | | |
| NUMBER OF DRAWINGS: | 1 Drawing Figure(s); 1 Drawing Page(s) | | |
| LINE COUNT: | 310 | | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB An extruded wood simulative material is described which includes a high degree of cellulosic material content and begins with powdered thermoplastic material.

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CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L2 ANSWER 8 OF 18 USPATFULL on STN
ACCESSION NUMBER: 2001:14115 USPATFULL
TITLE: Compression molding of synthetic wood material
INVENTOR(S): Brandt, Jeffrey R., Blacklick, OH, United States
Zehner, Burch E., Gahanna, OH, United States
PATENT ASSIGNEE(S): Crane Plastics Company Limited Partnership, Columbus,
OH, United States (U.S. corporation)

| | NUMBER | KIND | DATE |
|-----------------------|--|------|--------------|
| PATENT INFORMATION: | US 6180257 | B1 | 20010130 |
| APPLICATION INFO.: | US 1996-739416 | | 19961029 (8) |
| DOCUMENT TYPE: | Utility | | |
| FILE SEGMENT: | Granted | | |
| PRIMARY EXAMINER: | Kiliman, Leszek | | |
| LEGAL REPRESENTATIVE: | Standley & Gilcrest LLP | | |
| NUMBER OF CLAIMS: | 13 | | |
| EXEMPLARY CLAIM: | 1 | | |
| NUMBER OF DRAWINGS: | 3 Drawing Figure(s); 2 Drawing Page(s) | | |
| LINE COUNT: | 285 | | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A system of compression molding a synthetic wood formulation into a commercially useable synthetic wood component is described. Surprising results are achieved when the dry formulation is placed under heat and pressure. Many different components may be made using the present invention, such as by example, wood-like trim components for the housing construction industry.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L2 ANSWER 9 OF 18 USPATFULL on STN
ACCESSION NUMBER: 2000:121567 USPATFULL
TITLE: Extrusion of synthetic wood material
INVENTOR(S): Brandt, Jeffrey R., Blacklick, OH, United States
PATENT ASSIGNEE(S): Crane Plastics Company Limited Partnership, Columbus,
OH, United States (U.S. corporation)

| | NUMBER | KIND | DATE |
|-----------------------|--|------|--------------|
| PATENT INFORMATION: | US 6117924 | | 20000912 |
| APPLICATION INFO.: | US 1996-735329 | | 19961022 (8) |
| DOCUMENT TYPE: | Utility | | |
| FILE SEGMENT: | Granted | | |
| PRIMARY EXAMINER: | Michl, Paul R. | | |
| LEGAL REPRESENTATIVE: | Standley & Gilcrest LLP | | |
| NUMBER OF CLAIMS: | 2 | | |
| EXEMPLARY CLAIM: | 1 | | |
| NUMBER OF DRAWINGS: | 2 Drawing Figure(s); 2 Drawing Page(s) | | |
| LINE COUNT: | 283 | | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB An extrusion process is described for the extrusion of a synthetic wood material. The process includes a significantly higher compression ratio through which the extruded product must pass. The higher compression ratio results in significantly improved product qualities.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L2 ANSWER 10 OF 18 USPATFULL on STN

S/N 10/541,747

ACCESSION NUMBER: 1999:130480 USPATFULL
TITLE: Method for separating kenaf into core and fiber
INVENTOR(S): Stover, Jimmy R., 6610 Hunt, Corpus Christi, TX, United States 78413

| | NUMBER | KIND | DATE |
|-----------------------|---|------|--------------|
| PATENT INFORMATION: | US 5970582 | | 19991026 |
| APPLICATION INFO.: | US 1999-281038 | | 19990330 (9) |
| DOCUMENT TYPE: | Utility | | |
| FILE SEGMENT: | Granted | | |
| PRIMARY EXAMINER: | Neas, Michael A. | | |
| ASSISTANT EXAMINER: | Welch, Gary L. | | |
| LEGAL REPRESENTATIVE: | Moller, G. Turner | | |
| NUMBER OF CLAIMS: | 12 | | |
| EXEMPLARY CLAIM: | 1 | | |
| NUMBER OF DRAWINGS: | 10 Drawing Figure(s); 5 Drawing Page(s) | | |
| LINE COUNT: | 477 | | |

AB A method and apparatus for separating kenaf into fiber and core uses a modified stick machine conventionally used in the cotton industry for removing trash from unginned cotton. Lengths of kenaf are delivered onto the periphery of a saw cylinder so the toothed wheels snag the fiber and draw the kenaf across a grate. Core is detached from the fiber, passes through the grate and is delivered to a core outlet. Fiber on the toothed wheels are removed by a doffing wheel and delivered to a fiber outlet. Multiple saw cylinder/doffing wheel assemblies are provided.

L2 ANSWER 11 OF 18 USPATFULL on STN
ACCESSION NUMBER: 1999:15622 USPATFULL
TITLE: Renewable surface for extruded synthetic wood material
INVENTOR(S): Zehner, Burch E., Gahanna, OH, United States
Brandt, Jeffrey R., Blacklick, OH, United States
PATENT ASSIGNEE(S): Crane Plastics Company Limited Partnership, Columbus, OH, United States (U.S. corporation)

| | NUMBER | KIND | DATE |
|-----------------------|--|------|--------------|
| PATENT INFORMATION: | US 5866264 | | 19990202 |
| APPLICATION INFO.: | US 1996-735334 | | 19961022 (8) |
| DOCUMENT TYPE: | Utility | | |
| FILE SEGMENT: | Granted | | |
| PRIMARY EXAMINER: | Cain, Edward J. | | |
| LEGAL REPRESENTATIVE: | Standley & Gilcrest | | |
| NUMBER OF CLAIMS: | 19 | | |
| EXEMPLARY CLAIM: | 1 | | |
| NUMBER OF DRAWINGS: | 4 Drawing Figure(s); 2 Drawing Page(s) | | |
| LINE COUNT: | 345 | | |

AB A process is described in which an article of manufacture may be produced which includes a renewable surface on a synthetic wood composite substrate.

L2 ANSWER 12 OF 18 USPATFULL on STN
ACCESSION NUMBER: 1998:131342 USPATFULL
TITLE: Balanced cooling of extruded synthetic wood material
INVENTOR(S): Brandt, Jeffrey R., Blacklick, OH, United States
Taylor, William G., Columbus, OH, United States
Miller, James M., Millersport, OH, United States
PATENT ASSIGNEE(S): Crane Plastics Company Limited Partnership, Columbus,

OH, United States (U.S. corporation)

| | NUMBER | KIND | DATE |
|--|--|------|--------------|
| PATENT INFORMATION: | US 5827462 | | 19981027 |
| APPLICATION INFO.: | US 1996-735323 | | 19961022 (8) |
| DOCUMENT TYPE: | Utility | | |
| FILE SEGMENT: | Granted | | |
| PRIMARY EXAMINER: | Bhat, Nina | | |
| LEGAL REPRESENTATIVE: | Standley & Gilcrest | | |
| NUMBER OF CLAIMS: | 9 | | |
| EXEMPLARY CLAIM: | 1 | | |
| NUMBER OF DRAWINGS: | 4 Drawing Figure(s); 2 Drawing Page(s) | | |
| LINE COUNT: | 297 | | |
| CAS INDEXING IS AVAILABLE FOR THIS PATENT. | | | |
| AB | An extrusion process is described in which a balanced cooling apparatus is incorporated. The cooling apparatus provides a coolant bath to an extruded component. | | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L2 ANSWER 13 OF 18 USPATFULL on STN
ACCESSION NUMBER: 1998:27654 USPATFULL
TITLE: Board produced from malvaceous bast plant and process for producing the same
INVENTOR(S): Kohno, Tsuyoshi, c/o Kohno Shinsozai Kaimatsus Co., Ltd., 333-189, Midoro-cho, Matsuyama Ehime, Japan 791-02
Yamaguchi, Hiroharu, Fuwa-gun, Japan
PATENT ASSIGNEE(S): Onishi, Atsushi, Tokyo, Japan (non-U.S. individual)
Kohno, Tsuyoshi, Ehime, Japan (non-U.S. individual)

| | NUMBER | KIND | DATE |
|---------------------|----------------|------|--------------------------|
| PATENT INFORMATION: | US 5728269 | | 19980317 |
| | WO 9619328 | | 19960627 |
| APPLICATION INFO.: | US 1996-696892 | | 19961018 (8) |
| | WO 1995-JP2635 | | 19951222 |
| | | | 19961018 PCT 371 date |
| | | | 19961018 PCT 102(e) date |

| | NUMBER | DATE |
|-----------------------|--|----------|
| PRIORITY INFORMATION: | JP 1994-336092 | 19941222 |
| | JP 1995-90332 | 19950322 |
| DOCUMENT TYPE: | Utility | |
| FILE SEGMENT: | Granted | |
| PRIMARY EXAMINER: | Czaja, Donald E. | |
| ASSISTANT EXAMINER: | Leavitt, Steven B. | |
| LEGAL REPRESENTATIVE: | Pearne, Gordon, McCoy & Granger LLP | |
| NUMBER OF CLAIMS: | 16 | |
| EXEMPLARY CLAIM: | 1 | |
| NUMBER OF DRAWINGS: | 1 Drawing Figure(s); 1 Drawing Page(s) | |
| LINE COUNT: | 869 | |
| AB | A board composed of a lignocellulosic material and the modification thereof as the substantial components and having good mechanical strength, even when the board does not contain any components derived from an additive, by utilizing the autoadhesion of a specified lignocellulosic substance. This board is produced by molding under heat and pressure a lignocellulosic substance containing at least 30 weight % | |

of a malvaceae bast plant, being substantially free from any component derived from an adhesive, and has a strength value of more than 100 as defined by the following formula (I): $0.48+Y/X^2$, wherein Y is a bending strength (kgf/cm.²) and X is a density (g/cm.³). A particularly preferable example of the plant is the kenaf.

L2 ANSWER 14 OF 18 USPAT2 on STN
ACCESSION NUMBER: 2004:243421 USPAT2
TITLE: Method of producing a fiber board
INVENTOR(S): Okuzawa, Masayuki, Sanda, JAPAN
Ohnishi, Kenji, Osaka, JAPAN
Okudaira, Yuzo, Hyogo, JAPAN
Ando, Hideyuki, Suita, JAPAN
Umeoka, Kazunori, Nara, JAPAN
Ryu, Bunkai, Kadoma, JAPAN
Naito, Shigeki, Shijonawate, JAPAN
Sugawara, Ryo, Nishinomiya, JAPAN
PATENT ASSIGNEE(S): Matsushita Electric Works, Ltd., Osaka, JAPAN (non-U.S. corporation)

| | NUMBER | KIND | DATE |
|---------------------|----------------|------|---------------|
| PATENT INFORMATION: | US 7045027 | B2 | 20060516 |
| APPLICATION INFO.: | US 2004-757532 | | 20040115 (10) |

| | NUMBER | DATE |
|-----------------------|---|----------|
| PRIORITY INFORMATION: | JP 2003-96846 | 20030331 |
| DOCUMENT TYPE: | Utility | |
| FILE SEGMENT: | GRANTED | |
| PRIMARY EXAMINER: | Aftergut, Jeff H. | |
| ASSISTANT EXAMINER: | Schatz, Chris | |
| LEGAL REPRESENTATIVE: | Birch Stewart Kolasch & Birch LLP | |
| NUMBER OF CLAIMS: | 9 | |
| EXEMPLARY CLAIM: | 1 | |
| NUMBER OF DRAWINGS: | 17 Drawing Figure(s); 8 Drawing Page(s) | |
| LINE COUNT: | 1179 | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention relates to a method of producing a fiber board characterized in that it comprises the following processes (a)-(f):
(a) a separating process of a bast portion,
(b) a fiberizing process by defibrating the bast portion of the kenaf,
(c) a preparing process of a mat comprising the kenaf fibers having an average length of 10-200 mm and an average diameter of 10-300 μm ,
(d) a supplying process of an adhesive agent into the fiber mat,
(e) a drying process of the adhesive agent, and
(f) a molding process by heating said fiber mat under pressure to form a fiber board having a density of 600-900 kg/m.³.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L2 ANSWER 15 OF 18 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2007:529524 CAPLUS
DOCUMENT NUMBER: 146:482752
TITLE: Plant fiber compressed pellets, plant fiber-resin composite compositions, and molded products thereof
INVENTOR(S): Sugawara, Akira; Saito, Eiichiro; Yamaguchi, Hiroshi; Ueno, Akira
PATENT ASSIGNEE(S): Matsushita Electric Works, Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 13pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|----------|
| JP 2007119559 | A | 20070517 | JP 2005-311978 | 20051026 |
| PRIORITY APPLN. INFO.: | | | JP 2005-311978 | 20051026 |

AB Title pellets are prepared by compressing plant-derived lignocellulosic fibers with controlled moisture content of 10-30% and are mixed with resin pellets and kneaded to give the title compns. Thus, kenaf bast fiber bundles were cut, controlled of moisture content to 17%, and pelletized to give compressed pellets showing bulk d. 0.60 at moisture content 8% and good extrudability. Polyethylene (Novatec HJ 490) pellets were blended with 20% of the compressed pellets, kneaded, and pelletized to give a uniform composition

L2 ANSWER 16 OF 18 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1999:264674 CAPLUS
DOCUMENT NUMBER: 131:59896
TITLE: Mercerization and dyeing of kenaf/cotton blend fabrics
AUTHOR(S): Ramaswamy, Gita N.; Wang, Jinhua; Soeharto, Bambang
CORPORATE SOURCE: Kansas State University, Manhattan, USA
SOURCE: Textile Chemist and Colorist (1999), 31(3), 27-31
CODEN: TCCOB6; ISSN: 0040-490X
PUBLISHER: American Association of Textile Chemists and Colorists
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Kenaf is being considered an alternative agricultural crop in many states. Research has proven the feasibility of both woven and nonwoven textile products made from kenaf fiber blends. However, for kenaf to be used in apparel, its response to conventional finishing and dyeing processes must be evaluated. Therefore, the objectives of this study were to determine the effects of bleaching and slack and tension mercerizing on phys. properties, dye uptake, and colorfastness of kenaf/cotton fabrics. The slack- and tension-mercerized kenaf/cotton blend fabrics showed less shrinkage than the resp. controls. Barium activity number was not a good indicator of the level of mercerization of the kenaf/cotton blend fabric. The number obtained was less than 150, yet the fabric showed all effects of mercerization. Moisture content of the mercerized kenaf/cotton blend fabric (6.9%) was slightly less than that of the 100% mercerized cotton control fabric (8.1%). Mercerization increased the dye uptake for the kenaf/cotton fabric.

REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 17 OF 18 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1979:105925 CAPLUS
DOCUMENT NUMBER: 90:105925
ORIGINAL REFERENCE NO.: 90:16739a,16742a
TITLE: Bale storage of kenaf for pulp
AUTHOR(S): Bagby, M. O.; Clark, T. F.; Adamson, W. C.; White, G. A.; Cunningham, R. L.
CORPORATE SOURCE: NRRC, USDA, Peoria, IL, USA
SOURCE: Nonwood Plant Fiber Pulping (1978), 9, 33-9
CODEN: NPFRDN; ISSN: 0197-4513
DOCUMENT TYPE: Journal

LANGUAGE: English
AB Frost-killed, field-dried kenaf bales having initial moisture content 12% and 31% were stored for 1.5 yr under the covering of black polypropylene (I) [9003-07-0], tarpaulin, and kenaf. The initial moisture content had little or no effect on yields and properties of pulp prepared from the covered kenaf. Kenaf solids were best preserved by the tarpaulin covering and were equal to kenaf stored in an unheated barn; covering with I and kenaf resulted in .apprx.10% and .apprx.50% less solids recovery, resp., than the tarpaulin covers.

L2 ANSWER 18 OF 18 JAPIO (C) 2008 JPO on STN

ACCESSION NUMBER: 2002-300851 JAPIO

TITLE: METHOD FOR PRODUCING KENAF CUBE

INVENTOR: ROBERT E BLEDSOE

PATENT ASSIGNEE(S): WORLD KENAF PRODUCT:KK

PATENT INFORMATION:

| PATENT NO | KIND | DATE | ERA | MAIN IPC |
|---------------|------|----------|--------|------------|
| JP 2002300851 | A | 20021015 | Heisei | A23K001-14 |

APPLICATION INFORMATION

STN FORMAT: JP 2001-105829 20010404

ORIGINAL: JP2001105829 Heisei

PRIORITY APPLN. INFO.: JP 2001-105829 20010404

SOURCE: PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 2002

AN 2002-300851 JAPIO

AB PROBLEM TO BE SOLVED: To obtain a kenaf cube comprising kenaf only without using any additive to improve storage efficiency and transportation efficiency and maintaining dryness of the kenaf cube.

SOLUTION: This method producing kenaf cube comprises a first drying process S1, a cutting process S2, a storing process S3, a humidifying process S4, a compressing process S5 and a second drying process S6. The first process S1 dries the reaped kenaf to 10-12 weight% of a moisture content. The cutting process S2 cuts the kenaf into a predetermined length. The storing process S3 stores the cut kenaf by spouting them into a pasture wagon. The humidifying process S4 humidifies kenaf stored in the pasture wagon to 15 weight% of the moisture content. The compressing process S5 compresses the kenaf into a cubic shape and the kenaf cube obtained in the compressing process is dried in the second drying process S6.

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=> d 12 13 ibib hit

L2 ANSWER 13 OF 18 USPATFULL on STN

ACCESSION NUMBER: 1998:27654 USPATFULL

TITLE: Board produced from malvaceous bast plant and process for producing the same

INVENTOR(S): Kohno, Tsuyoshi, c/o Kohno Shinsozai Kaimatsus Co., Ltd., 333-189, Midoro-cho, Matsuyama Ehime, Japan 791-02

Yamaguchi, Hiroharu, Fuwa-gun, Japan

PATENT ASSIGNEE(S): Onishi, Atsushi, Tokyo, Japan (non-U.S. individual)
Kohno, Tsuyoshi, Ehime, Japan (non-U.S. individual)

| NUMBER | KIND | DATE |
|--------|------|------|
|--------|------|------|

S/N 10/541,747

| | | |
|---------------------|----------------|--------------------------|
| PATENT INFORMATION: | US 5728269 | 19980317 |
| | WO 9619328 | 19960627 |
| APPLICATION INFO.: | US 1996-696892 | 19961018 (8) |
| | WO 1995-JP2635 | 19951222 |
| | | 19961018 PCT 371 date |
| | | 19961018 PCT 102(e) date |

| | NUMBER | DATE |
|-----------------------|--|----------|
| PRIORITY INFORMATION: | JP 1994-336092 | 19941222 |
| | JP 1995-90332 | 19950322 |
| DOCUMENT TYPE: | Utility | |
| FILE SEGMENT: | Granted | |
| PRIMARY EXAMINER: | Czaja, Donald E. | |
| ASSISTANT EXAMINER: | Leavitt, Steven B. | |
| LEGAL REPRESENTATIVE: | Pearne, Gordon, McCoy & Granger LLP | |
| NUMBER OF CLAIMS: | 16 | |
| EXEMPLARY CLAIM: | 1 | |
| NUMBER OF DRAWINGS: | 1 Drawing Figure(s); 1 Drawing Page(s) | |
| LINE COUNT: | 869 | |
| DETD | The moisture content of the kenaf and other lignocellulosic material in the embodiments and the comparative examples are adjusted within the range of 5 to 10%. The moisture adjustment is conducted by heating these material at 105° C. when the adhesive is not used, and by heating at 80° C. and by keeping for 72 hours in the atmosphere at 20° C. and 65% RH. | |
| CLM | What is claimed is:
16. A method for preparing a board having a value according to Equation I greater than 100: value=0.48+Y/X. ² ,
(Equation I), wherein Y is bending strength (kgf/cm. ²) and X is density (g/cm. ³), said method comprising: providing an effective amount of a kenaf plant; removing a bast portion from said kenaf plant; flaking a woody portion of said kenaf plant after removal of said bast portion, thereby producing kenaf flakes; treating said kenaf flakes by exposure to steam for a time period of from about 3 minutes to about 40 minutes, said steam having a temperature of from about 120° C. to about 180° C. and having a pressure generally corresponding to the saturated vapor pressure of said steam at said temperature; ensuring that the moisture content of said kenaf flakes is from about 5% to about 15%; providing a form adapted for pressing said kenaf flakes; depositing said kenaf flakes in said form; and hot pressing said kenaf flakes in said form at a temperature of from about 210° C. to about 230° C. and a pressure of at least about 5 kg/cm. ² . | |

=> d 12 12 ibib hit

L2 ANSWER 12 OF 18 USPATFULL on STN
ACCESSION NUMBER: 1998:131342 USPATFULL
TITLE: Balanced cooling of extruded synthetic wood material
INVENTOR(S): Brandt, Jeffrey R., Blacklick, OH, United States
Taylor, William G., Columbus, OH, United States
Miller, James M., Millersport, OH, United States
PATENT ASSIGNEE(S): Crane Plastics Company Limited Partnership, Columbus, OH, United States (U.S. corporation)

| NUMBER | KIND | DATE |
|--------|------|------|
|--------|------|------|

 PATENT INFORMATION: US 5827462 19981027
 APPLICATION INFO.: US 1996-735323 19961022 (8)
 DOCUMENT TYPE: Utility
 FILE SEGMENT: Granted
 PRIMARY EXAMINER: Bhat, Nina
 LEGAL REPRESENTATIVE: Standley & Gilcrest
 NUMBER OF CLAIMS: 9
 EXEMPLARY CLAIM: 1
 NUMBER OF DRAWINGS: 4 Drawing Figure(s); 2 Drawing Page(s)
 LINE COUNT: 297

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

DETD The cellulosic fibrous-polymer composite material used in the present invention may have a higher cellulosic fiber content than normally recognized. The overall process may include the mixing of raw materials including cellulosic fibers, thermoplastic materials, cross-linking agents and process lubricants. The cellulosic material may be any one or more cellulosic materials such as sawdust, newspapers, alfalfa, wheat pulp, wood chips, wood fibers, wood particles, ground wood, wood flour, wood flakes, wood veneers, wood laminates, paper, cardboard, straw, cotton, rice hulls, coconut shells, peanut shells, bagass, plant fibers, bamboo or palm fiber, and kenaf. Cellulosic material is first dried to a low moisture content. Although apparently not critical a preferred moisture content is about 1%-10%.

=> d 12 11 ibib hit

L2 ANSWER 11 OF 18 USPATFULL on STN
 ACCESSION NUMBER: 1999:15622 USPATFULL
 TITLE: Renewable surface for extruded synthetic wood material
 INVENTOR(S): Zehner, Burch E., Gahanna, OH, United States
 Brandt, Jeffrey R., Blacklick, OH, United States
 PATENT ASSIGNEE(S): Crane Plastics Company Limited Partnership, Columbus, OH, United States (U.S. corporation)

| | NUMBER | KIND | DATE |
|-----------------------|--|------|--------------|
| PATENT INFORMATION: | US 5866264 | | 19990202 |
| APPLICATION INFO.: | US 1996-735334 | | 19961022 (8) |
| DOCUMENT TYPE: | Utility | | |
| FILE SEGMENT: | Granted | | |
| PRIMARY EXAMINER: | Cain, Edward J. | | |
| LEGAL REPRESENTATIVE: | Standley & Gilcrest | | |
| NUMBER OF CLAIMS: | 19 | | |
| EXEMPLARY CLAIM: | 1 | | |
| NUMBER OF DRAWINGS: | 4 Drawing Figure(s); 2 Drawing Page(s) | | |
| LINE COUNT: | 345 | | |

DETD The cellulosic fibrous-polymer composite material used in the present invention may have a higher cellulosic fiber content than normally recognized. The overall process may include the mixing of raw materials including cellulosic fibers, thermoplastic materials, cross-linking agents and process lubricants. The cellulosic material may be any one or more cellulosic materials such as sawdust, newspapers, alfalfa, wheat pulp, wood chips, wood fibers, wood particles, ground wood, wood flour, wood flakes, wood veneers, wood laminates, paper, cardboard, straw, cotton, rice hulls, coconut shells, peanut shells, bagass, plant fibers, bamboo or palm fiber, and kenaf. Cellulosic material is first dried to a low moisture content. A preferred moisture content is about 1%-10%.

S/N 10/541,747

=> d 12 9 ibib hit

L2 ANSWER 9 OF 18 USPATFULL on STN
ACCESSION NUMBER: 2000:121567 USPATFULL
TITLE: Extrusion of synthetic wood material
INVENTOR(S): Brandt, Jeffrey R., Blacklick, OH, United States
PATENT ASSIGNEE(S): Crane Plastics Company Limited Partnership, Columbus,
OH, United States (U.S. corporation)

| | NUMBER | KIND | DATE |
|-----------------------|--|------|--------------|
| PATENT INFORMATION: | US 6117924 | | 20000912 |
| APPLICATION INFO.: | US 1996-735329 | | 19961022 (8) |
| DOCUMENT TYPE: | Utility | | |
| FILE SEGMENT: | Granted | | |
| PRIMARY EXAMINER: | Michl, Paul R. | | |
| LEGAL REPRESENTATIVE: | Standley & Gilcrest LLP | | |
| NUMBER OF CLAIMS: | 2 | | |
| EXEMPLARY CLAIM: | 1 | | |
| NUMBER OF DRAWINGS: | 2 Drawing Figure(s); 2 Drawing Page(s) | | |
| LINE COUNT: | 283 | | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

DETD The cellulosic fibrous-polymer composite material used in the present invention may have a higher cellulosic fiber content than normally recognized. The overall process may include the mixing of raw materials including cellulosic fibers, thermoplastic materials, cross-linking agents and process lubricants. The cellulosic material may be any one or more cellulosic materials such as sawdust, newspapers, alfalfa, wheat pulp, wood chips, wood fibers, wood particles, ground wood, wood flour, wood flakes, wood veneers, wood laminates, paper, cardboard, straw, cotton, rice hulls, coconut shells, peanut shells, bagass, plant fibers, bamboo or palm fiber, and kenaf. Cellulosic material is first dried to a low moisture content. Although apparently not critical a preferred moisture content is about 1% to 10%.

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FILE 'USPATFULL, USPATOLD, USPAT2, CAPLUS, JAPIO' ENTERED AT 14:26:38 ON
03 JUN 2008

L1 55 S (KENAF OR DECAN(1A)HEMP OR AMBARY)(S) (MOISTURE(3A) (CONTENT OR
L2 18 S (KENAF OR DECAN(1A)HEMP OR AMBARY)(12A) (MOISTURE(3A) (CONTENT

=> s l1 and biodegrad?(5a)(polymer# or resin#) or polylactic acid or
poly?(1a)(lactic acid)
L3 47870 L1 AND BIODEGRAD?(5A)(POLYMER# OR RESIN#) OR POLYLACTIC ACID OR
POLY?(1A)(LACTIC ACID)

=> s l1 and (kenaf or decan(1a)hemp or ambary)(s)(biodegrad?(5a)(polymer# or
resin#) or polylactic acid or poly?(1a)(lactic acid))
L4 5 L1 AND (KENAF OR DECAN(1A) HEMP OR AMBARY)(S) (BIODEGRAD?(5A) (POL
YMER# OR RESIN#) OR POLYLACTIC ACID OR POLY?(1A)(LACTIC ACID))

=> d 14 1-5 ibib abs

L4 ANSWER 1 OF 5 USPATFULL on STN
ACCESSION NUMBER: 2006:174249 USPATFULL
TITLE: Kenaf-fiber-reinforced resin composition
INVENTOR(S): Serizawa, Shin, Tokyo, JAPAN
Inoue, Kazuhiko, Tokyo, JAPAN
Iji, Masatoshi, Tokyo, JAPAN
PATENT ASSIGNEE(S): NEC CORPORATION, Tokyo, JAPAN (non-U.S. corporation)

| | NUMBER | KIND | DATE |
|---------------------|----------------|------|-----------------------|
| PATENT INFORMATION: | US 20060147695 | A1 | 20060706 |
| APPLICATION INFO.: | US 2004-541747 | A1 | 20040109 (10) |
| | WO 2004-JP100 | | 20040109 |
| | | | 20050708 PCT 371 date |

| | NUMBER | DATE |
|-----------------------|--|----------|
| PRIORITY INFORMATION: | JP 2003-3856 | 20030110 |
| | JP 2003-407799 | 20031205 |
| DOCUMENT TYPE: | Utility | |
| FILE SEGMENT: | APPLICATION | |
| LEGAL REPRESENTATIVE: | FOLEY AND LARDNER LLP, SUITE 500, 3000 K STREET NW,
WASHINGTON, DC, 20007, US | |
| NUMBER OF CLAIMS: | 18 | |
| EXEMPLARY CLAIM: | 1 | |
| NUMBER OF DRAWINGS: | 3 Drawing Page(s) | |
| LINE COUNT: | 952 | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB An object of the present invention is to provide a fiber-reinforced resin composition suitable for producing molded articles for products such as electrical and electronic equipment. The object has been achieved by a biodegradable resin composition containing a kenaf fiber, which contains a kenaf fiber in an amount of 10 to 50% by mass. In this case, the biodegradable resin is preferably a crystalline thermoplastic resin, particularly polylactic acid. The average fiber length (number average fiber length of the fibers excluding fragments) of the kenaf fiber is preferably 100 μm to 20 mm, and the kenaf fiber preferably contains a kenaf fiber having a fiber length of 300 μm to 20 mm. As the kenaf fiber, a fiber prepared from bast of kenaf is preferred.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L4 ANSWER 2 OF 5 USPATFULL on STN
ACCESSION NUMBER: 2006:96866 USPATFULL
TITLE: Methods for manufacturing fiber molded articles
INVENTOR(S): Hashiba, Masanori, Kariya-shi, JAPAN
Kawajiri, Hideki, Kariya-shi, JAPAN

| | NUMBER | KIND | DATE |
|---------------------|----------------|------|---------------|
| PATENT INFORMATION: | US 20060082025 | A1 | 20060420 |
| APPLICATION INFO.: | US 2005-243475 | A1 | 20051004 (11) |

| | NUMBER | DATE |
|-----------------------|----------------|----------|
| PRIORITY INFORMATION: | JP 2004-297649 | 20041012 |

DOCUMENT TYPE: JP 2005-75259 20050316
Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: PATTERSON, THUENTE, SKAAR & CHRISTENSEN, P.A., 4800 IDS CENTER, 80 SOUTH 8TH STREET, MINNEAPOLIS, MN, 55402-2100, US
NUMBER OF CLAIMS: 14
EXEMPLARY CLAIM: 1
LINE COUNT: 851

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A method is taught for manufacturing a fiber molded article that comprises a fibrous material and a binder material. The method includes the steps of molding a base product under heat and pressure, the base product including the fibrous material and a binder material liquid that comprises the binder material fluidized by a fluidizer, and drying the base product under heat and pressure in order to evaporate the fluidizer contained in the base product before the base product is molded. The drying step is performed at a temperature between the boiling point of the fluidizer minus 20° C. and the boiling point of the fluidizer plus 20° C. and below the melting point of the binder material.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L4 ANSWER 3 OF 5 USPATFULL on STN
ACCESSION NUMBER: 2005:158051 USPATFULL
TITLE: Environmentally friendly polylactide-based composite formulations
INVENTOR(S): Mohanty, Amar K., Okemos, MI, UNITED STATES
Drzal, Lawrence T., Okemos, MI, UNITED STATES
Rook, Brian P., Holt, MI, UNITED STATES
Misra, Manjusri, Okemos, MI, UNITED STATES

| | NUMBER | KIND | DATE |
|-----------------------|--|------|---------------|
| PATENT INFORMATION: | US 20050136259 | A1 | 20050623 |
| | US 7354656 | B2 | 20080408 |
| APPLICATION INFO.: | US 2005-32609 | A1 | 20050110 (11) |
| RELATED APPLN. INFO.: | Continuation of Ser. No. US 2002-304816, filed on 26 Nov 2002, GRANTED, Pat. No. US 6869985 | | |
| DOCUMENT TYPE: | Utility | | |
| FILE SEGMENT: | APPLICATION | | |
| LEGAL REPRESENTATIVE: | ARMSTRONG WORLD INDUSTRIES, INC., 2500 COLUMBIA AVENUE, P.O. BOX 3001, LANCASTER, PA, 17604-3001, US | | |
| NUMBER OF CLAIMS: | 23 | | |
| EXEMPLARY CLAIM: | 1-51 | | |
| NUMBER OF DRAWINGS: | 5 Drawing Page(s) | | |
| LINE COUNT: | 1759 | | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Polymeric materials and products, including sheet flooring materials prepared from the polymeric materials, and processes for preparing the polymeric materials, are disclosed. The polymeric materials include a polylactic acid-based polymer in combination with plasticizer and a compatibilizer, and optionally include a filler. The polymeric material can include between about 30 to about 50 percent by weight polyvinyl chloride, polyethylene glycol, polyglycolide, ethylene vinyl acetate, polycarbonate, polycaprolactone, polyhydroxyalkanoates, or polyolefins modified with polar groups, for example, ionomers. The plasticizer is typically an epoxidized vegetable oil or esterified and epoxidized vegetable oil and is typically present in an amount of between about 10 and about 50% by weight. In some embodiments, the compatibilizer is a

Polyolefin modified with one or more polar functional groups, and is typically present in an amount of between about 5 and about 10% by weight. The material can be used in decorative surface coverings, such as a floor coverings, particularly when it is in the form of a polymeric sheet. The polymeric material can be present in at least one layer of a floor covering, which floor covering can also include one or more additional layers such as wear layers, foamed or foamable layers, top coat layers and design layers. The additional layers can also include the polymeric material.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L4 ANSWER 4 OF 5 USPATFULL on STN

ACCESSION NUMBER: 2005:144009 USPATFULL

TITLE: Environmentally friendly polylactide-based composite formulations

INVENTOR(S): Mohanty, Amar K., Okemos, MI, UNITED STATES
Drzal, Lawrence T., Okemos, MI, UNITED STATES
Rook, Brian P., Holt, MI, UNITED STATES
Misra, Manjusri, Okemos, MI, UNITED STATES

| NUMBER | KIND | DATE |
|--------|------|------|
|--------|------|------|

PATENT INFORMATION: US 20050123744 A1 20050609
US 7256223 B2 20070814

APPLICATION INFO.: US 2005-32608 A1 20050110 (11)

RELATED APPLN. INFO.: Continuation of Ser. No. US 2002-304816, filed on 26 Nov 2002, GRANTED, Pat. No. US 6869985

DOCUMENT TYPE: Utility

FILE SEGMENT: APPLICATION

LEGAL REPRESENTATIVE: ARMSTRONG WORLD INDUSTRIES, INC., 2500 COLUMBIA AVENUE, P.O. BOX 3001, LANCASTER, PA, 17604-3001, US

NUMBER OF CLAIMS: 48

EXEMPLARY CLAIM: 1

NUMBER OF DRAWINGS: 5 Drawing Page(s)

LINE COUNT: 1909

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Polymeric materials and products, including sheet flooring materials prepared from the polymeric materials, and processes for preparing the polymeric materials, are disclosed. The polymeric materials include a polylactic acid-based polymer in combination with plasticizer and a compatibilizer, and optionally include a filler. The polymeric material can include between about 30 to about 50 percent by weight polyvinyl chloride, polyethylene glycol, polyglycolide, ethylene vinyl acetate, polycarbonate, polycaprolactone, polyhydroxyalkanoates, or polyolefins modified with polar groups, for example, ionomers. The plasticizer is typically an epoxidized vegetable oil or esterified and epoxidized vegetable oil and is typically present in an amount of between about 10 and about 50% by weight. In some embodiments, the compatibilizer is a polyolefin modified with one or more polar functional groups, and is typically present in an amount of between about 5 and about 10% by weight. The material can be used in decorative surface coverings, such as a floor coverings, particularly when it is in the form of a polymeric sheet. The polymeric material can be present in at least one layer of a floor covering, which floor covering can also include one or more additional layers such as wear layers, foamed or foamable layers, top coat layers and design layers. The additional layers can also include the polymeric material.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

S/N 10/541,747

L4 ANSWER 5 OF 5 USPATFULL on STN
ACCESSION NUMBER: 2003:307060 USPATFULL
TITLE: Environmentally friendly polylactide-based composite formulations
INVENTOR(S): Mohanty, Amar Kumar, Okemos, MI, UNITED STATES
Drzal, Lawrence T., Okemos, MI, UNITED STATES
Rook, Brian P., Holt, MI, UNITED STATES
Misra, Manjusri, Okemos, MI, UNITED STATES

| | NUMBER | KIND | DATE |
|---------------------|----------------|------|---------------|
| PATENT INFORMATION: | US 20030216496 | A1 | 20031120 |
| | US 6869985 | B2 | 20050322 |
| APPLICATION INFO.: | US 2002-304816 | A1 | 20021126 (10) |

| | NUMBER | DATE |
|-----------------------|---|---------------|
| PRIORITY INFORMATION: | US 2002-379440P | 20020510 (60) |
| DOCUMENT TYPE: | Utility | |
| FILE SEGMENT: | APPLICATION | |
| LEGAL REPRESENTATIVE: | Womble Carlyle Sandridge & Rice, PLLC, P.O. Box 7037, Atlanta, GA, 30357-0037 | |
| NUMBER OF CLAIMS: | 69 | |
| EXEMPLARY CLAIM: | 1 | |
| NUMBER OF DRAWINGS: | 5 Drawing Page(s) | |
| LINE COUNT: | 1938 | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Polymeric materials and products, including sheet flooring materials prepared from the polymeric materials, and processes for preparing the polymeric materials, are disclosed. The polymeric materials include a polylactic acid-based polymer in combination with plasticizer and a compatibilizer, and optionally include a filler. The polymeric material can include between about 30 to about 50 percent by weight polyvinyl chloride, polyethylene glycol, polyglycolide, ethylene vinyl acetate, polycarbonate, polycaprolactone, polyhydroxyalkanoates, or polyolefins modified with polar groups, for example, ionomers. The plasticizer is typically an epoxidized vegetable oil or esterified and epoxidized vegetable oil and is typically present in an amount of between about 10 and about 50% by weight. In some embodiments, the compatibilizer is a polyolefin modified with one or more polar functional groups, and is typically present in an amount of between about 5 and about 10% by weight. The material can be used in decorative surface coverings, such as a floor coverings, particularly when it is in the form of a polymeric sheet. The polymeric material can be present in at least one layer of a floor covering, which floor covering can also include one or more additional layers such as wear layers, foamed or foamable layers, top coat layers and design layers. The additional layers can also include the polymeric material.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

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L4 ANSWER 5 OF 5 USPATFULL on STN
ACCESSION NUMBER: 2003:307060 USPATFULL
TITLE: Environmentally friendly polylactide-based composite formulations
INVENTOR(S): Mohanty, Amar Kumar, Okemos, MI, UNITED STATES

Drzal, Lawrence T., Okemos, MI, UNITED STATES
 Rook, Brian P., Holt, MI, UNITED STATES
 Misra, Manjusri, Okemos, MI, UNITED STATES

| | NUMBER | KIND | DATE |
|---------------------|----------------|------|---------------|
| PATENT INFORMATION: | US 20030216496 | A1 | 20031120 |
| | US 6869985 | B2 | 20050322 |
| APPLICATION INFO.: | US 2002-304816 | A1 | 20021126 (10) |

| | NUMBER | DATE |
|-----------------------|---|---------------|
| PRIORITY INFORMATION: | US 2002-379440P | 20020510 (60) |
| DOCUMENT TYPE: | Utility | |
| FILE SEGMENT: | APPLICATION | |
| LEGAL REPRESENTATIVE: | Womble Carlyle Sandridge & Rice, PLLC, P.O. Box 7037, Atlanta, GA, 30357-0037 | |
| NUMBER OF CLAIMS: | 69 | |
| EXEMPLARY CLAIM: | 1 | |
| NUMBER OF DRAWINGS: | 5 Drawing Page(s) | |
| LINE COUNT: | 1938 | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

DETD [0041] Inorganic fillers and reinforcements can enhance the various polylactic acid-based layer(s) in floor covering materials including the polymeric material described herein. This enhancement can be through improvements in appearance, physical properties, or chemical characteristics. The particular inorganic filler/reinforcement attributes that are important are the nature of the inorganic material, the shape of the material, and any surface treatment or coating. There are many important aspects of the inorganic material. Density is important in the application and long term utility of a floor covering. Highly filled back coat layers (e.g. up to 85% by weight of filler) can be very useful in this regard. Another basic material attribute is hardness. Increased hardness is desirable in the final product, but too hard a filler (such as silica) can have negative effects on the wear of processing equipment, such as melt mixers and extruders. Table 1 lists some common inorganic fillers/reinforcements.

TABLE 1

| Inorganic/organic Material | Density g/cc |
|--|--------------|
| Calcium Carbonate | 2.7 |
| Talc | 2.9 |
| Mica | 2.6 |
| Glass Fibres | 2.6 |
| Silica | 2.5 |
| Wollastonite | 2.9 |
| Aluminium Trihydrate | 2.4 |
| Magnesium | 2.3 |
| Hydroxide | |
| Titanium Dioxide | 4.2 |
| Exfoliated Nano-Clay | 2.6 |
| Bio/natural fibers including, but not limited to: | 1.1-1.4 |
| Kenaf, Jute, Hemp, Sisal, Corn Stalk, Grass fibers, Wood | |

fiber

DETD [0062] Natural/bio fibers: Natural fibers, alone or in combination with synthetic fibers, can be used to reinforce the plastic material described herein. The natural fibers can serve as reinforcement by enhancing the strength and stiffness and reducing the weight of the resulting composite structures. The properties of natural fibers vary with their source and treatment. The mechanical properties depend on whether the fibers are taken from plant stem or leaf, the quality of the plant locations, the age of the plant and the extraction process (retting) adopted to collect the fiber from the plants. Depending on their origin, the natural fibers may be grouped into: bast (stem), leaf and seed types. Examples include: (i) Bast: Jute, Flax, Kenaf, Hemp and Ramie; (ii) Leaf Sisal, henequen and pineapple leaf fiber (PALF); (iii) Seed/fruit: Cotton, coir and kapok. The natural fibers are lignocellulosic in nature and are primarily include cellulose, hemicellulose and lignin. The various chemical constituents of a specific natural fiber can also vary considerably. Such variation may be due to the origin, age, retting (mode of extraction of fiber from the source) process adopted, etc. Among all the natural fibers listed, coir is observed to contain least amount of cellulose but the highest percent of lignin. The amount of cellulose, in lignocellulosic systems, can vary depending on the species and age of the plant/species. The lignin, being polyfunctional, exists in combination with more than one neighboring chain molecules of cellulose and/or hemicellulose, making a crosslinked structure. The natural fibers are hydrophilic in nature, with moisture contents typically ranging between 8 and 13% by weight.

=> FIL STNGUIDE

COST IN U.S. DOLLARS

| SINCE FILE
ENTRY | TOTAL
SESSION |
|---------------------|------------------|
|---------------------|------------------|

FULL ESTIMATED COST

| | |
|--------|--------|
| 164.12 | 164.33 |
|--------|--------|

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

| SINCE FILE
ENTRY | TOTAL
SESSION |
|---------------------|------------------|
|---------------------|------------------|

CA SUBSCRIBER PRICE

| | |
|-------|-------|
| -2.40 | -2.40 |
|-------|-------|

FILE 'STNGUIDE' ENTERED AT 14:38:39 ON 03 JUN 2008

USE IS SUBJECT TO THE TERMS OF YOUR CUSTOMER AGREEMENT

COPYRIGHT (C) 2008 AMERICAN CHEMICAL SOCIETY (ACS)

FILE CONTAINS CURRENT INFORMATION.

LAST RELOADED: May 30, 2008 (20080530/UP).

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(FILE 'HOME' ENTERED AT 14:26:05 ON 03 JUN 2008)

SET ABBR ON PERM

SET PLURALS ON PERM

FILE 'USPATFULL, USPATOLD, USPAT2, CAPLUS, JAPIO' ENTERED AT 14:26:38 ON
03 JUN 2008

| | |
|----|---|
| L1 | 55 SEA ABB=ON PLU=ON (KENAF OR DECAN(1A) HEMP OR AMBARY)(S) (MOIS
TURE(3A) (CONTENT OR AMOUNT OR LEVEL)) |
| L2 | 18 SEA ABB=ON PLU=ON (KENAF OR DECAN(1A) HEMP OR AMBARY)(12A) (MO
ISTURE(3A) (CONTENT OR AMOUNT OR LEVEL))
D L2 1-18 IBIB ABS
D L2 13 IBIB HIT
D L2 12 IBIB HIT |

S/N 10/541,747

D L2 11 IBIB HIT
D L2 9 IBIB HIT
L3 47870 SEA ABB=ON PLU=ON L1 AND BIODEGRAD?(5A) (POLYMER# OR RESIN#)
OR POLYLACTIC ACID OR POLY?(1A) (LACTIC ACID)
L4 5 SEA ABB=ON PLU=ON L1 AND (KENAF OR DECAN(1A) HEMP OR
AMBARY) (S) (BIODEGRAD?(5A) (POLYMER# OR RESIN#) OR POLYLACTIC
ACID OR POLY?(1A) (LACTIC ACID))
D L4 1-5 IBIB ABS
D L4 5 IBIB HIT

FILE 'STNGUIDE' ENTERED AT 14:38:39 ON 03 JUN 2008

FILE HOME

FILE USPATFULL

FILE COVERS 1971 TO PATENT PUBLICATION DATE: 3 Jun 2008 (20080603/PD)
FILE LAST UPDATED: 3 Jun 2008 (20080603/ED)
HIGHEST GRANTED PATENT NUMBER: US7383587
HIGHEST APPLICATION PUBLICATION NUMBER: US2008127393
CA INDEXING IS CURRENT THROUGH 3 Jun 2008 (20080603/UPCA)
ISSUE CLASS FIELDS (/INCL) CURRENT THROUGH: 3 Jun 2008 (20080603/PD)
REVISED CLASS FIELDS (/NCL) LAST RELOADED: Apr 2008
USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Apr 2008

FILE USPATOLD

FILE COVERS U.S. PATENTS 1790-1975
Produced using data provided by Univentio.

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FILE USPAT2

FILE COVERS 2001 TO PUBLICATION DATE: 3 Jun 2008 (20080603/PD)
FILE LAST UPDATED: 3 Jun 2008 (20080603/ED)
HIGHEST GRANTED PATENT NUMBER: US20080061113
HIGHEST APPLICATION PUBLICATION NUMBER: US2008126760
CA INDEXING IS CURRENT THROUGH 3 Jun 2008 (20080603/UPCA)
ISSUE CLASS FIELDS (/INCL) CURRENT THROUGH: 3 Jun 2008 (20080603/PD)
REVISED CLASS FIELDS (/NCL) LAST RELOADED: Apr 2008
USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Apr 2008

FILE CAPLUS

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S/N 10/541, 747

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FILE COVERS 1907 - 3 Jun 2008 VOL 148 ISS 23
FILE LAST UPDATED: 2 Jun 2008 (20080602/ED)

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FILE JAPIO
FILE LAST UPDATED: 07 MAY 2008 <20080507/UP>
MOST RECENT PUBLICATION DATE: 31 JAN 2008 <20080131/PD>

>>> GRAPHIC IMAGES AVAILABLE <<<

FILE STNGUIDE
FILE CONTAINS CURRENT INFORMATION.
LAST RELOADED: May 30, 2008 (20080530/UP).

| | | | |
|--|------------------|---------------|--|
| => file uspatall caplus japio | | | |
| COST IN U.S. DOLLARS | SINCE FILE ENTRY | TOTAL SESSION | |
| FULL ESTIMATED COST | 1.38 | 165.71 | |
| DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS) | SINCE FILE ENTRY | TOTAL SESSION | |
| CA SUBSCRIBER PRICE | 0.00 | -2.40 | |

FILE 'USPATFULL' ENTERED AT 14:52:43 ON 03 JUN 2008
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CA INDEXING COPYRIGHT (C) 2008 AMERICAN CHEMICAL SOCIETY (ACS)

FILE 'USPAT2' ENTERED AT 14:52:43 ON 03 JUN 2008
CA INDEXING COPYRIGHT (C) 2008 AMERICAN CHEMICAL SOCIETY (ACS)

FILE 'CAPLUS' ENTERED AT 14:52:43 ON 03 JUN 2008
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FILE 'JAPIO' ENTERED AT 14:52:43 ON 03 JUN 2008
COPYRIGHT (C) 2008 Japanese Patent Office (JPO)- JAPIO

=> s kenaf(s)(biodegrad?(5a)(polymer# or resin#) or polylactic acid or
poly?(1a)(lactic acid))
L5 144 KENAF(S)(BIODEGRAD?(5A)(POLYMER# OR RESIN#) OR POLYLACTIC ACID
OR POLY?(1A)(LACTIC ACID))

=> s kenaf(15a)(fiber#)
L6 2423 KENAF(15A)(FIBER#)

=> s 15 and 16
L7 123 L5 AND L6

=> s kenaf(s)(moisture(4a)(content or amount or level)
UNMATCHED LEFT PARENTHESIS 'S')(MOISTURE'
The number of right parentheses in a query must be equal to the

S/N 10/541,747

number of left parentheses.

=> s kenaf(s)(moisture(4a)(content or amount or level))
L8 55 KENAF(S)(MOISTURE(4A)(CONTENT OR AMOUNT OR LEVEL))

=> s 17 and 18
L9 5 L7 AND L8

=> d 19 1-5 ibib abs

L9 ANSWER 1 OF 5 USPATFULL on STN
ACCESSION NUMBER: 2006:174249 USPATFULL
TITLE: Kenaf-fiber-reinforced resin
composition
INVENTOR(S): Serizawa, Shin, Tokyo, JAPAN
Inoue, Kazuhiko, Tokyo, JAPAN
Iji, Masatoshi, Tokyo, JAPAN
PATENT ASSIGNEE(S): NEC CORPORATION, Tokyo, JAPAN (non-U.S. corporation)

| | NUMBER | KIND | DATE |
|---------------------|----------------|------|-----------------------|
| PATENT INFORMATION: | US 20060147695 | A1 | 20060706 |
| APPLICATION INFO.: | US 2004-541747 | A1 | 20040109 (10) |
| | WO 2004-JP100 | | 20040109 |
| | | | 20050708 PCT 371 date |

| | NUMBER | DATE |
|-----------------------|--|----------|
| PRIORITY INFORMATION: | JP 2003-3856 | 20030110 |
| | JP 2003-407799 | 20031205 |
| DOCUMENT TYPE: | Utility | |
| FILE SEGMENT: | APPLICATION | |
| LEGAL REPRESENTATIVE: | FOLEY AND LARDNER LLP, SUITE 500, 3000 K STREET NW,
WASHINGTON, DC, 20007, US | |
| NUMBER OF CLAIMS: | 18 | |
| EXEMPLARY CLAIM: | 1 | |
| NUMBER OF DRAWINGS: | 3 Drawing Page(s) | |
| LINE COUNT: | 952 | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB An object of the present invention is to provide a fiber-reinforced resin composition suitable for producing molded articles for products such as electrical and electronic equipment. The object has been achieved by a biodegradable resin composition containing a kenaf fiber, which contains a kenaf fiber in an amount of 10 to 50% by mass. In this case, the biodegradable resin is preferably a crystalline thermoplastic resin, particularly polylactic acid. The average fiber length (number average fiber length of the fibers excluding fragments) of the kenaf fiber is preferably 100 μm to 20 mm, and the kenaf fiber preferably contains a kenaf fiber having a fiber length of 300 μm to 20 mm. As the kenaf fiber, a fiber prepared from bast of kenaf is preferred.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 2 OF 5 USPATFULL on STN
ACCESSION NUMBER: 2006:96866 USPATFULL
TITLE: Methods for manufacturing fiber molded articles

S/N 10/541,747

INVENTOR(S): Hashiba, Masanori, Kariya-shi, JAPAN
Kawajiri, Hideki, Kariya-shi, JAPAN

| | NUMBER | KIND | DATE |
|---------------------|----------------|------|---------------|
| PATENT INFORMATION: | US 20060082025 | A1 | 20060420 |
| APPLICATION INFO.: | US 2005-243475 | A1 | 20051004 (11) |

| | NUMBER | DATE |
|-----------------------|--|----------|
| PRIORITY INFORMATION: | JP 2004-297649 | 20041012 |
| | JP 2005-75259 | 20050316 |
| DOCUMENT TYPE: | Utility | |
| FILE SEGMENT: | APPLICATION | |
| LEGAL REPRESENTATIVE: | PATTERSON, THUENTE, SKAAR & CHRISTENSEN, P.A., 4800 IDS CENTER, 80 SOUTH 8TH STREET, MINNEAPOLIS, MN, 55402-2100, US | |

NUMBER OF CLAIMS: 14
EXEMPLARY CLAIM: 1

LINE COUNT: 851

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A method is taught for manufacturing a fiber molded article that comprises a fibrous material and a binder material. The method includes the steps of molding a base product under heat and pressure, the base product including the fibrous material and a binder material liquid that comprises the binder material fluidized by a fluidizer, and drying the base product under heat and pressure in order to evaporate the fluidizer contained in the base product before the base product is molded. The drying step is performed at a temperature between the boiling point of the fluidizer minus 20° C. and the boiling point of the fluidizer plus 20° C. and below the melting point of the binder material.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 3 OF 5 USPATFULL on STN
ACCESSION NUMBER: 2005:158051 USPATFULL
TITLE: Environmentally friendly polylactide-based composite formulations
INVENTOR(S): Mohanty, Amar K., Okemos, MI, UNITED STATES
Drzal, Lawrence T., Okemos, MI, UNITED STATES
Rook, Brian P., Holt, MI, UNITED STATES
Misra, Manjusri, Okemos, MI, UNITED STATES

| | NUMBER | KIND | DATE |
|-----------------------|--|------|---------------|
| PATENT INFORMATION: | US 20050136259 | A1 | 20050623 |
| | US 7354656 | B2 | 20080408 |
| APPLICATION INFO.: | US 2005-32609 | A1 | 20050110 (11) |
| RELATED APPLN. INFO.: | Continuation of Ser. No. US 2002-304816, filed on 26 Nov 2002, GRANTED, Pat. No. US 6869985 | | |
| DOCUMENT TYPE: | Utility | | |
| FILE SEGMENT: | APPLICATION | | |
| LEGAL REPRESENTATIVE: | ARMSTRONG WORLD INDUSTRIES, INC., 2500 COLUMBIA AVENUE, P.O. BOX 3001, LANCASTER, PA, 17604-3001, US | | |
| NUMBER OF CLAIMS: | 23 | | |
| EXEMPLARY CLAIM: | 1-51 | | |
| NUMBER OF DRAWINGS: | 5 Drawing Page(s) | | |
| LINE COUNT: | 1759 | | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Polymeric materials and products, including sheet flooring materials

prepared from the polymeric materials, and processes for preparing the polymeric materials, are disclosed. The polymeric materials include a polylactic acid-based polymer in combination with plasticizer and a compatibilizer, and optionally include a filler. The polymeric material can include between about 30 to about 50 percent by weight polyvinyl chloride, polyethylene glycol, polyglycolide, ethylene vinyl acetate, polycarbonate, polycaprolactone, polyhydroxyalkanoates, or polyolefins modified with polar groups, for example, ionomers. The plasticizer is typically an epoxidized vegetable oil or esterified and epoxidized vegetable oil and is typically present in an amount of between about 10 and about 50% by weight. In some embodiments, the compatibilizer is a polyolefin modified with one or more polar functional groups, and is typically present in an amount of between about 5 and about 10% by weight. The material can be used in decorative surface coverings, such as a floor coverings, particularly when it is in the form of a polymeric sheet. The polymeric material can be present in at least one layer of a floor covering, which floor covering can also include one or more additional layers such as wear layers, foamed or foamable layers, top coat layers and design layers. The additional layers can also include the polymeric material.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 4 OF 5 USPATFULL on STN

ACCESSION NUMBER: 2005:144009 USPATFULL

TITLE: Environmentally friendly polylactide-based composite formulations

INVENTOR(S): Mohanty, Amar K., Okemos, MI, UNITED STATES
Drzal, Lawrence T., Okemos, MI, UNITED STATES
Rook, Brian P., Holt, MI, UNITED STATES
Misra, Manjusri, Okemos, MI, UNITED STATES

| | NUMBER | KIND | DATE |
|-----------------------|--|------|---------------|
| PATENT INFORMATION: | US 20050123744 | A1 | 20050609 |
| | US 7256223 | B2 | 20070814 |
| APPLICATION INFO.: | US 2005-32608 | A1 | 20050110 (11) |
| RELATED APPLN. INFO.: | Continuation of Ser. No. US 2002-304816, filed on 26 Nov 2002, GRANTED, Pat. No. US 6869985 | | |
| DOCUMENT TYPE: | Utility | | |
| FILE SEGMENT: | APPLICATION | | |
| LEGAL REPRESENTATIVE: | ARMSTRONG WORLD INDUSTRIES, INC., 2500 COLUMBIA AVENUE, P.O. BOX 3001, LANCASTER, PA, 17604-3001, US | | |
| NUMBER OF CLAIMS: | 48 | | |
| EXEMPLARY CLAIM: | 1 | | |
| NUMBER OF DRAWINGS: | 5 Drawing Page(s) | | |
| LINE COUNT: | 1909 | | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Polymeric materials and products, including sheet flooring materials prepared from the polymeric materials, and processes for preparing the polymeric materials, are disclosed. The polymeric materials include a polylactic acid-based polymer in combination with plasticizer and a compatibilizer, and optionally include a filler. The polymeric material can include between about 30 to about 50 percent by weight polyvinyl chloride, polyethylene glycol, polyglycolide, ethylene vinyl acetate, polycarbonate, polycaprolactone, polyhydroxyalkanoates, or polyolefins modified with polar groups, for example, ionomers. The plasticizer is typically an epoxidized vegetable oil or esterified and epoxidized vegetable oil and is typically present in an amount of between about 10 and about 50% by weight. In some embodiments, the compatibilizer is a

polyolefin modified with one or more polar functional groups, and is typically present in an amount of between about 5 and about 10% by weight. The material can be used in decorative surface coverings, such as a floor coverings, particularly when it is in the form of a polymeric sheet. The polymeric material can be present in at least one layer of a floor covering, which floor covering can also include one or more additional layers such as wear layers, foamed or foamable layers, top coat layers and design layers. The additional layers can also include the polymeric material.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 5 OF 5 USPATFULL on STN
ACCESSION NUMBER: 2003:307060 USPATFULL
TITLE: Environmentally friendly polylactide-based composite formulations
INVENTOR(S): Mohanty, Amar Kumar, Okemos, MI, UNITED STATES
Drzal, Lawrence T., Okemos, MI, UNITED STATES
Rook, Brian P., Holt, MI, UNITED STATES
Misra, Manjusri, Okemos, MI, UNITED STATES

| | NUMBER | KIND | DATE |
|---------------------|----------------|------|---------------|
| PATENT INFORMATION: | US 20030216496 | A1 | 20031120 |
| | US 6869985 | B2 | 20050322 |
| APPLICATION INFO.: | US 2002-304816 | A1 | 20021126 (10) |

| | NUMBER | DATE |
|-----------------------|---|---------------|
| PRIORITY INFORMATION: | US 2002-379440P | 20020510 (60) |
| DOCUMENT TYPE: | Utility | |
| FILE SEGMENT: | APPLICATION | |
| LEGAL REPRESENTATIVE: | Womble Carlyle Sandridge & Rice, PLLC, P.O. Box 7037, Atlanta, GA, 30357-0037 | |
| NUMBER OF CLAIMS: | 69 | |
| EXEMPLARY CLAIM: | 1 | |
| NUMBER OF DRAWINGS: | 5 Drawing Page(s) | |
| LINE COUNT: | 1938 | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Polymeric materials and products, including sheet flooring materials prepared from the polymeric materials, and processes for preparing the polymeric materials, are disclosed. The polymeric materials include a polylactic acid-based polymer in combination with plasticizer and a compatibilizer, and optionally include a filler. The polymeric material can include between about 30 to about 50 percent by weight polyvinyl chloride, polyethylene glycol, polyglycolide, ethylene vinyl acetate, polycarbonate, polycaprolactone, polyhydroxyalkanoates, or polyolefins modified with polar groups, for example, ionomers. The plasticizer is typically an epoxidized vegetable oil or esterified and epoxidized vegetable oil and is typically present in an amount of between about 10 and about 50% by weight. In some embodiments, the compatibilizer is a polyolefin modified with one or more polar functional groups, and is typically present in an amount of between about 5 and about 10% by weight. The material can be used in decorative surface coverings, such as a floor coverings, particularly when it is in the form of a polymeric sheet. The polymeric material can be present in at least one layer of a floor covering, which floor covering can also include one or more additional layers such as wear layers, foamed or foamable layers, top coat layers and design layers. The additional layers can also include the polymeric material.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

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L9 ANSWER 4 OF 5 USPATFULL on STN
ACCESSION NUMBER: 2005:144009 USPATFULL
TITLE: Environmentally friendly polylactide-based composite formulations
INVENTOR(S): Mohanty, Amar K., Okemos, MI, UNITED STATES
Drzal, Lawrence T., Okemos, MI, UNITED STATES
Rook, Brian P., Holt, MI, UNITED STATES
Misra, Manjusri, Okemos, MI, UNITED STATES

| | NUMBER | KIND | DATE |
|-----------------------|--|------|---------------|
| PATENT INFORMATION: | US 20050123744 | A1 | 20050609 |
| | US 7256223 | B2 | 20070814 |
| APPLICATION INFO.: | US 2005-32608 | A1 | 20050110 (11) |
| RELATED APPLN. INFO.: | Continuation of Ser. No. US 2002-304816, filed on 26 Nov 2002, GRANTED, Pat. No. US 6869985 | | |
| DOCUMENT TYPE: | Utility | | |
| FILE SEGMENT: | APPLICATION | | |
| LEGAL REPRESENTATIVE: | ARMSTRONG WORLD INDUSTRIES, INC., 2500 COLUMBIA AVENUE, P.O. BOX 3001, LANCASTER, PA, 17604-3001, US | | |
| NUMBER OF CLAIMS: | 48 | | |
| EXEMPLARY CLAIM: | 1 | | |
| NUMBER OF DRAWINGS: | 5 Drawing Page(s) | | |
| LINE COUNT: | 1909 | | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

SUMM The polymeric material can be used to prepare a component of a decorative surface covering, such as a floor covering. The polymeric material is particularly useful as a component of a floor covering when it is in the form of a polymeric sheet. The polymeric material can be present in at least one layer of a floor covering, which floor covering can also include one or more additional layers such as wear layers, foamed or foamable layers, top coat layers and design layers. The additional layers can also include the polymeric material. The material can also be mixed with cellulosic fibers like Kenaf, Industrial Hemp, Flax, Jute, Sisal, Henequen, Wood fiber, Grasses and Straws (Corn/Wheat/Rice) to form composites, such as natural/cellulose fiber composites. The material can also be mixed with organoclays to form composites, such as nanocomposites.

DETD Inorganic fillers and reinforcements can enhance the various polylactic acid-based layer(s) in floor covering materials including the polymeric material described herein. This enhancement can be through improvements in appearance, physical properties, or chemical characteristics. The particular inorganic filler/reinforcement attributes that are important are the nature of the inorganic material, the shape of the material, and any surface treatment or coating. There are many important aspects of the inorganic material. Density is important in the application and long term utility of a floor covering. Highly filled back coat layers (e.g. up to 85% by weight of filler) can be very useful in this regard. Another basic material attribute is hardness. Increased hardness is desirable in the final product, but too hard a filler (such as silica) can have negative effects on the wear of processing equipment, such as melt mixers and extruders. Table 1 lists some common inorganic fillers/reinforcements.

TABLE 1

| | Inorganic/organic Material | Density g/cc |
|---|--|--------------|
| Calcium Carbonate | 2.7 | |
| Talc | 2.9 | |
| Mica | 2.6 | |
| Glass Fibres | 2.6 | |
| Silica | 2.5 | |
| Wollastonite | 2.9 | |
| Aluminium Trihydrate | 2.4 | |
| Magnesium | 2.3 | |
| Hydroxide | | |
| Titanium Dioxide | 4.2 | |
| Exfoliated Nano-Clay | 2.6 | |
| Bio/natural fibers including, but not limited to: | 1.1-1.4 | |
| Kenaf, Jute, Hemp,
Sisal, Corn Stalk,
Grass fibers, Wood
fiber | | |
| DETD | Natural/bio fibers: Natural fibers, alone or in combination with synthetic fibers, can be used to reinforce the plastic material described herein. The natural fibers can serve as reinforcement by enhancing the strength and stiffness and reducing the weight of the resulting composite structures. The properties of natural fibers vary with their source and treatment. The mechanical properties depend on whether the fibers are taken from plant stem or leaf, the quality of the plant locations, the age of the plant and the extraction process (retting) adopted to collect the fiber from the plants. Depending on their origin, the natural fibers may be grouped into: bast (stem), leaf and seed types. Examples include: (i) Bast: Jute, Flax, Kenaf, Hemp and Ramie; (ii) Leaf Sisal, henequen and pineapple leaf fiber (PALF); (iii) Seed/fruit: Cotton, coir and kapok. The natural fibers are lignocellulosic in nature and are primarily include cellulose, hemicellulose and lignin. The various chemical constituents of a specific natural fiber can also vary considerably. Such variation may be due to the origin, age, retting (mode of extraction of fiber from the source) process adopted, etc. Among all the natural fibers listed, coir is observed to contain least amount of cellulose but the highest percent of lignin. The amount of cellulose, in lignocellulosic systems, can vary depending on the species and age of the plant/species. The lignin, being polyfunctional, exists in combination with more than one neighboring chain molecules of cellulose and/or hemicellulose, making a crosslinked structure. The natural fibers are hydrophilic in nature, with moisture contents typically ranging between 8 and 13% by weight. | |

=> log y

COST IN U.S. DOLLARS

SINCE FILE TOTAL
ENTRY SESSION

FULL ESTIMATED COST

53.22 218.93

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

SINCE FILE TOTAL
ENTRY SESSION

CA SUBSCRIBER PRICE

0.00 -2.40

S/N 10/541,747

STN INTERNATIONAL LOGOFF AT 14:55:47 ON 03 JUN 2008